

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application:

1. (Currently Amended) An apparatus comprising:

a surface on a body, said body adapted to move through a fluid; and

a plurality of nanostructures or microstructures, each nanostructure of said plurality of nanostructures having at least one dimension of less than one micrometer, and each microstructure of said plurality of microstructures having at least one dimension which is less than one millimeter, disposed in a pattern on said surface in a way such that friction between said surface and said fluid is controlled as a function of a surface energy of said nanostructures or microstructures and wherein said friction control is a function of a variable degree of contact between said surface and said fluid resulting from an electrically-induced penetration of at least a portion of said fluid through said nanostructures or microstructures disposed on said surface, each nanostructure of said plurality of nanostructures maintaining an orientation that is perpendicular to said surface of said body such that as said body moves through said fluid said fluid travels in a direction across a top of each said nanostructure; and

at least a first electrode adapted to facilitate said electrically-induced penetration by applying a voltage differential between said surface and said fluid in a way such that said fluid is caused to penetrate said pattern at a select location on said surface such that said penetration of said fluid at said select location alters a direction or a speed of said body in said fluid.

2. (Original) The apparatus of claim 1 wherein said body is an underwater vehicle.

3. (Currently Amended) ~~The apparatus of claim 2 wherein said body is a submarine.~~An apparatus comprising:

a surface on a body, said body adapted to move through a fluid and wherein said body is a submarine; and

a plurality of nanostructures or microstructures, each nanostructure of said plurality of nanostructures having at least one dimension of less than one micrometer, and each microstructure of said plurality of microstructures having at least one dimension which is less than one millimeter, disposed in a pattern on said surface in a way such that friction between said surface and said fluid is controlled as a function of a surface energy of said nanostructures or microstructures and wherein said friction control is a function of a variable degree of contact between said surface and said fluid resulting from an electrically-induced penetration of at least a portion of said fluid through said nanostructures or microstructures disposed on said surface.

4. (Currently Amended) ~~The apparatus of claim 2 wherein said body is a torpedo~~An apparatus comprising:

a surface on a body, said body adapted to move through a fluid and wherein said body is a torpedo; and

a plurality of nanostructures or microstructures, each nanostructure of said plurality of nanostructures having at least one dimension of less than one micrometer, and each microstructure of said plurality of microstructures having at least one dimension which is less than one millimeter, disposed in a pattern on said surface in a way such that friction between said surface and said fluid is controlled as a function of a surface energy of said nanostructures or microstructures and wherein said friction control is a function of a variable degree of contact between said surface and said fluid resulting from an electrically-induced penetration of at least a portion of said fluid through said nanostructures or microstructures disposed on said surface.

5. (Currently Amended) The apparatus of claim 4 ~~3~~ further comprising at least a first electrode adapted to apply a voltage differential between said surface and said fluid in a way such that said fluid is caused to penetrate said pattern at a select location on said surface such that said penetration of said fluid at said select location alters a direction or a speed of said body in said fluid.

Claims 6-11 were previously cancelled.

12. (New) The apparatus of claim 4 further comprising at least a first electrode adapted to apply a voltage differential between said surface and said fluid in a way such that said fluid is caused to penetrate said pattern at a select location on said surface such that said penetration of said fluid at said select location alters a direction or a speed of said body in said fluid.